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**US Army Corps of Engineers**
Detroit District

# Great Lakes Update

## Celebrating 150 Years at "The Soo"

The world-famous Soo Locks (Figure 1) have a rich history spanning 150 years. Ever since the steamer Illinois first passed through on June 18, 1855, the locks have played an important role in America's growth. Today the Soo Locks are one of the busiest and largest lock complexes in the world, able to handle 1000-foot freighters and well over 7,000 vessels per year.

**Figure 1: The World Famous Soo Locks**

The St. Marys River is the only water link between Lake Superior and the other Great Lakes. There is a section of the river known as the St. Marys Rapids where the water falls about 21 feet from the level of Lake Superior to the level of Lakes Michigan-Huron. The rapids form a natural barrier making navigation in the area impossible without the locks.

Before Europeans settled the area, the Ojibway Indians living nearby, carried their canoes around the rapids. When the settlement of the Northwest Territory boosted trade and brought larger boats, it became necessary to unload cargo and haul it by wagon to a second boat waiting on the other side of the rapids. This process, called portaging, is how Portage Avenue, near the river in Sault Ste. Marie, Michigan acquired its name.

Ever increasing trade pushed the Northwest Fur Company to construct the first lock in 1797. This lock was built on the Canadian side of the river for small boats. This lock remained in use until it was destroyed in the War of 1812.

As the United States grew in the early 1800s, the state of Michigan lobbied the Federal Government to support building a canal and locks at Sault Ste. Marie. The state did not receive support right away. In fact one southern senator said that Michigan's Upper Peninsula (U.P.) was "beyond the remotest settlement of the United States" and building a canal there would be like placing one on the "moon." Minds quickly changed upon the discovery of iron ore and copper in the western U.P. The raw minerals needed to be shipped to industrial centers in the southern Great Lakes but because of the rapids, they needed to be portaged, costing companies both time and money.

Seeing the benefit to the nation, Congress passed an act in 1852 granting 750,000 acres of public land to the State of Michigan. This land was to be used as compensation to the company that would build a lock allowing waterborne commerce between Lake Superior and the other Great Lakes. The Fairbanks Scale Company, having extensive mining interests in the Upper Peninsula, undertook this challenging project and began digging in the summer of 1853.

Conditions at the site were far less than ideal. Severe winter weather would often leave equipment buried in snow and a cholera outbreak killed many workers. The height of construction had over 1,700 men working on the canal, putting in twelve-hour days for $20 a month.

In spite of the harsh conditions, Fairbanks' aggressive accountant, Charles T. Harvey, completed a system of two locks in tandem, each 350 feet long and having a drop of nine feet within the two year timeframe set by the State of Michigan. On May 31, 1855, control of the $900,000 project was turned over to the state and it was designated as the State Lock (Figure 2).


**Figure 2: The State Lock**

Boats passing through the State Lock were required to pay a toll of four cents per ton. In 1877 the toll was reduced to three cents.

Within a few years commerce through the canal had grown to national importance and the need for new locks became paramount. In 1877, the federal government deepened the canals leading to the locks and built the Weitzel Lock. The Weitzel Lock was named after its designer General Godfrey Weitzel. It was the first lock to fill via holes in the floor rather than by opening its gates. The updates were completed in 1881 with a cost of $2.4 million. The State of Michigan ceded jurisdiction of the locks to the United States government shortly after completion. The U.S. Army Corps of Engineers has operated the locks, toll free ever since. Ships of all flags are able to use the locks.

Increased boat traffic lead the Corps of Engineers to again update the locks in 1886. The Poe Lock, named for General Orlando M. Poe was completed in 1896 and replaced the old State Lock. General Poe also designed eight lighthouse towers on the Great Lakes, including the Presque Isle Light on Lake Huron and the Little Sable Point Light on Lake Michigan. In 1890 Congress passed the Rivers and Harbors Act, authorizing channels to be 300 feet wide by 21 feet deep in all of the Great Lakes and connecting channels.

The early 1900s saw more changes at the Soo Locks. In 1907, Congress passed the Davis Lock Act, authorizing a new lock. The Davis Lock, named after Colonel Charles E.L.B. Davis was completed in 1914. A second lock with the same specifications as the Davis was approved by Congress in 1912. The Sabin Lock, named for government engineer L.C. Sabin was completed and opened for use in 1919. These four locks helped the shipping industry on the Great Lakes flourish. A total tonnage of 92.6 million tons of cargo was carried in 1929, a record for the time period. A new record freight total of 145.2 million tons was reached in 1940 when many newer vessels had full load drafts of over 23 feet. These deeper draft boats could no longer fully utilize any of the locks at The Soo, as the deepest lock had a depth of 23 feet.

With the United States' entry into World War II, the need for raw materials greatly increased. Congress passed the MacArthur Lock Act in 1942

and construction commenced almost immediately on the site of the Weitzel Lock (Figure 3). "The Mac" is named for General Douglas MacArthur and was completed only thirteen months after Congressional approval. It's depth of 31 feet and length of 800 feet allowed larger ships to pass through. The Mac is still used today and can accommodate vessels up to 730 feet long and 75 feet wide.

**Figure 3: MacArthur Lock Construction May 18, 1943**

A new lock was planned and authorized by Congress in the Poe Lock Replacement Act of 1946. The Poe was to be lengthened to 1200 feet, widened to 110 feet and deepened to 32 feet. Funding issues held up the start of construction until 1961 and the new Poe Lock wasn't completed until 1968. The same year, the Sabin Lock was decommissioned and is no longer used. The Poe is the only lock to be constructed between two operating locks. In 1972 the Stewart J. Cort, the Great Lakes first 1000-foot freighter passed through the Poe Lock carrying a record load of 51,000 tons of taconite. Currently the MacArthur and Poe Locks average near 7,000 vessel passages per year. In 2004, close to 82 million tons of cargo passed through the locks.

The Soo Locks are a popular tourist attraction, drawing more than 600,000 visitors per year. The Army Corps of Engineers opens the lock complex to the public once a year, allowing a close up view of the massive ships and associated work. This year in celebration of the 150th anniversary, the Soo Locks Open House will be held on two days. The first being June 24 from 10 a.m. to 6 p.m and the second being September 2 from 10 a.m. to 6 p.m. All are welcome.

**Figure 4: Rendering of new lock configuration**

A new "Poe sized" lock is proposed to replace the Davis and Sabin Locks (Figure 4). The purpose is to provide for more efficient movement of waterborne commerce. The new lock is currently in its preconstruction engineering and design phase. A Project Cooperation Agreement (PCA), discussions with the Great Lakes Commission as the non-federal sponsor and authorization of final funding is still required. It is anticipated that execution of the PCA will be completed in FY05.

The Soo Locks opened for its 150th navigation season on March 25, 2005. If you get a chance, head on up to The Soo and take a look at these wonders of engineering. While visiting the locks, be sure to visit the newly renovated Soo Locks Visitors Center for many more facts.

## Public Meetings

The Lake Superior Board of Control will hold its annual public meeting the evening of July 12 on the campus of Lake Superior State in the Walker Cisler Conference Center in Sault Ste. Marie, MI. The meeting will also be teleconferenced to Georgian Bay at a place to be determined later.

The St. Lawrence River Board of Control will hold its annual public meeting the evening of May 11 in the Quinte Conservation Office Boardroom, 2061 Old Highway #2, Belleville, ON.

## Plan to join us for a great 150th Anniversary party!

# Soo Locks Celebrates!

*will begin June 24, 2005.*

**Please join us! Everyone welcome!**
**Check back often for further updates!**

**http://www.lre.usace.army.mil/newsandevents/events/soolockscelebrates!/**

**150th Commemoration and Rededication Ceremony**
*9 a.m., Friday, June 25*

**Soo Locks Festival**
**Concert in the Park**
*6 to 9 p.m., Thursday, June 23, Soo Locks Park*

**Engineers Day -- Soo Locks Open House**
*10 a.m. to 6 p.m. Friday, June 24*

*&*

*10 a.m. to 6 p.m. Friday, September 2*

*Cross the locks and see the ships up close.*

Engineers Day activities include:

**Soo Locks Visitor Center**
*10 a.m., Soo Visitor Center*

**U.S. Army Recruiting Command**
**Army of One Humvee, Rock Climbing Wall**
*10 a.m., Soo Locks Park*